

FILE M/047/010

NOTICE OF INTENT TO COMMENCE MINING OPERATIONS

AND

MINING AND RECLAMATION PLAN

CHEVRON RESOURCES COMPANY

AMERICAN GILSONITE

BONANZA OPERATIONS

RECEIVED

DEC 10 1987

DIVISION OF
OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES AND ENERGY
DIVISION OF OIL, GAS AND MINING
4241 State Office Building
Salt Lake City, Utah 84114
Telephone: (801) 533-5771

NOTICE OF INTENTION TO COMMENCE MINING OPERATIONS
and
MINING AND RECLAMATION PLAN

Based on Provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, General Rules and Regulations and Rules of Practice and Procedures, By Order of the Board of Oil, Gas and Mining.

Mine Name: American Gilsonite-Bonanza Oper. Mine Plan Date: _____
File No.: ACT/ 047 / 010 Date Received: _____
Operator: American Gilsonite Company DOGM Lead Reviewer: _____
Mineral(s) to be Mined: Gilsonite

Please attach other sheets as needed and include cross-reference page numbers when used.

- American Gilsonite Company, a division of
1. Name of Applicant or Company: Chevron Resources Company
Corporation (X) Partnership () Individual ()
2. Address: Permanent: Bonanza Mining Operations
Bonanza, Utah 84008
Temporary: N/A
3. Company Representative: Name: O. LeRoy Fyock
Title: Environmental Specialist, Utah Operations
Address: Manila Star Route, Vernal, Ut. 84078 Phone: 801-789-7795
4. Location of Operation: County(ies) Uintah - refer to page 1.a
Township(s): _____ Range(s): _____ Section(s): _____
Township(s): _____ Range(s): _____ Section(s): _____
Township(s): _____ Range(s): _____ Section(s): _____
5. Owner(s) of record of the surface area within the land to be affected:
- | | |
|---|--|
| Name: <u>U.S. Dept. of Interior</u> | Address: <u>Vernal Subdistrict, 170 S 500 E, Vernal, Ut 8407</u> |
| Name: <u>State of Utah</u> | Address: <u>State Ofc. Bldg, Salt Lake City, Ut.</u> |
| Name: <u>American Gilsonite Company</u> | Address: <u>1150 Kennecott Bldg, Salt Lake City, Ut. 84133</u> |
| Name: _____ | Address: _____ |

LOCATION OF OPERATION: Lands are held within Uintah and Dushesne
 Counties in Utah within the following
 Sections

T 8 S R 17 E Section 32
T 9 S R 17 E Sections 5, 4
T 2 S R 2 E Sections 18, 19, 20
T 8 S R 24 E Section 32
T 9 S R 23 E Sections 1, 10, 12, 15, 25
T 9 S R 24 E Sections 1, 2, 3, 7, 12, 15, 16, 17, 22, 23, 24, 25,
26, 27, 28, 29, 30, 32, 33, 34, 35, 36
T 9 S R 25 E Sections 7, 8, 15, 16, 17, 21, 22, 23, 29, 30, 31, 32,
33
T 10 S R 22 E Section 24
T 10 S R 23 E Sections 28, 30, 32, 34
T 10 S R 24 E Sections 1, 2, 3
T 10 S R 25 E Section 6
T 11 S R 23 E Sections 1, 2, 12
T 11 S R 24 E Sections 4, 5, 6, 7, 8, 9, 14, 15, 16, 17, 20, 22, 23,
24, 25, 26, 30, 32
T 11 S \$ 25 E Sections 30, 21, 30, 32
T 12 S R 24 E Section 4
T 12 S R 25 E Sections 4, 5, 9, 10, 11, 12, 13, 14, 15, 24

6. Owner(s) of record of the minerals to be mined:

Name:	American Gilsonite Co.	Address:	1150 Kennecott Bldg, SLC, Ut. 84133
Name:	_____	Address:	_____
Name:	_____	Address:	_____
Name:	_____	Address:	_____

7. Owner(s) of record of all other minerals, including oil and gas, within any part of the land to be affected:

Name: American Gilsonite Co. Address: 1150 Kennecott Bldg, SLC, Ut. 84133
Name: Address:
Name: Address:

8. Have the above owners been notified in writing? (x) Yes, () No. If no, why not?

9. Have you or any other person, partnership or corporation associated with you received an approval of a Notice of Intention to Commence Mining Operations by the State of Utah for operations other than described herein? (X) Yes, () No. If yes, list all approval numbers now under surety:

ACT/047/009

ACT/047/011

10. Source of Operator's legal right to enter and conduct operations on the land to be covered by this Notice:

11. Give the names and mailing addresses of every principal Executive, Office, Partner (or person performing a similar function) of Applicant:

	Name	Title	Address
A.	R. F. Schlecht	Pres. Chevron Resources	595 Market St., San Francisco, CA
B.	C. Dahlstrom	Vice Pres. " "	" " " "
C.	J. H. Bailey	Mgr. Oper. & Dev. CRC	" " " "
D.	R. L. Haffner	Mgr. Utah Oper. CRC	1150 Kennecott Bldg., SLC, Ut. 84133

12. Has the Applicant, any subsidiary or affiliate or any person, partnership, association, trust or corporation controlled by or under common control with the Applicant, or any person required to be identified by Item 11 ever had an approval of a Notice of Intention to Mine or Explore withdrawn or has surety relating thereto ever been forfeited? () Yes, (x) No.

If yes, please explain: _____

Please note: Section 40-8-13 of the Act provides that information relating to the location, size or nature of the deposit, and marked confidential by the Operator, shall be protected as confidential information by the Board and the Division and not be a matter of public record in the absence of a written release from the Operator, or until the mining operation has been terminated as provided in Subsection (2) of Section 40-8-21 of the Act. This material should be so marked and included on separate cross-referenced sheets.

13. All maps and plans prepared for submission shall be of adequate scale and detail to show topographic features and clearly indicate the following details: Refer to page 3a for map index.

- A. Location and delineation of the extent of the land previously affected, as well as the proposed surface disturbance.
- B. Existing active or inactive, underground or surface mined areas.
- C. Boundaries of surface properties, including ownership.
- D. Names and locations of:
 - (1) Lakes, rivers, streams, creeks and springs.
 - (2) Roads, highways and buildings.
 - (3) Active or abandoned facilities.
 - (4) Transmission lines within 500 feet of the exterior limits of land affected.
 - (5) Gas and/or oil pipelines.
 - (6) Site elevation.
- E. Drainage patterns of land affected:
 - (1) Overburden or topsoil removal and storage areas.
 - (2) Areas susceptible to erosion.
 - (3) Natural waterways.
 - (4) Constructed drainages, diversions, berms and sediment ponds (design calculations shall be included).
 - (5) Receiving waters (State Health classification).
 - (6) Directional flow of all surface waters (indicated by arrows).
- F. Known drill holes:
 - (1) Location.
 - (2) Status.

MAPS

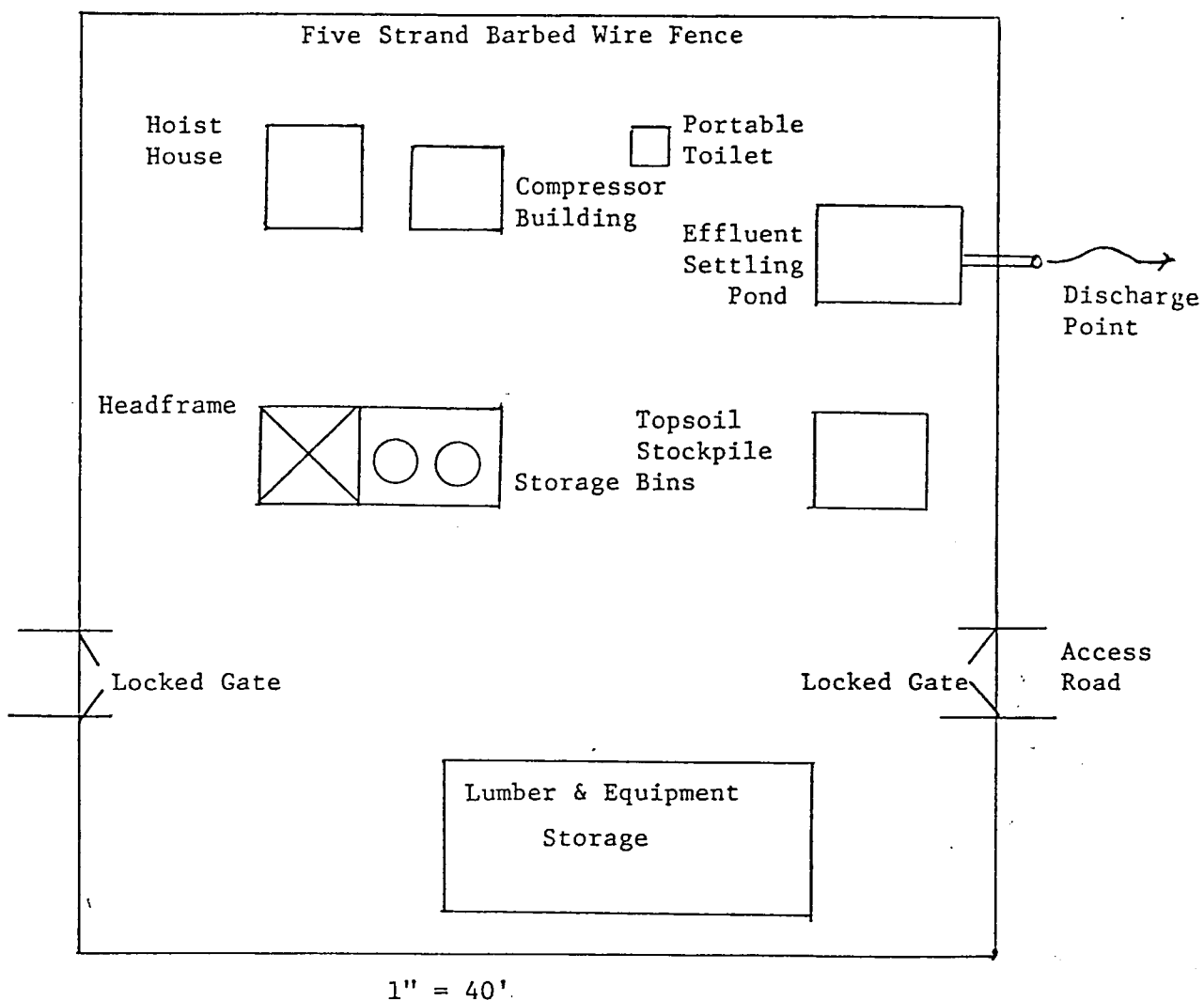
Due to the nature of gilsonite mining and the vast area involved, the following system of maps has been utilized.

1. Group Maps - This includes eight (8) USGS Quadrangle 1:24,000 maps. These maps provide:
 - a) Property boundaries and ownership
 - b) Disturbed areas prior to and after 1975
 - c) Lakes, rivers, streams creeks, springs, roads and highways in detail
2. Map I - This map is a 1:100,000 and allows a total presentation of the above eight (8) maps in 1, thus providing the juxtaposition of the various mines and facilities.
3. Map II - This map is a 1:1,000 and presents detailed information concerning the major facilities within a five (5) mile radius of Bonanza.
4. Map III - This map is a 1" = 40' and presents a "typical" mine site (page 3b). Rather than mapping each individual mine, an inventory of each site has been prepared, see Appendix I.
5. Exploration drill hole location map (Confidential).

MAP III

Page 3b

Typical One Acre Mine Site



NOTE: Refer to Appendix I for individual site data. Hoist Houses are normally on skids. Compressor buildings may be on skids or an 8' X 40' trailer. Headframes and storage bins are constructed with structural steel and may be moved intact or by dismantling. Topsoil stockpiles are approximately 4' to 6' in height and berms are constructed to divert storm runoff away from the piles. Settling ponds are used only at mine sites requiring de-watering. Storm water is directed away from the mine site by the natural slope of the site. Berms and/or ditches are used for erosion control as necessary.

- (3) Depths and thicknesses of:*
- Water bearing strata.
 - Mineral deposits.
 - Toxic or potentially toxic materials.
 - Surficial or plant supporting material (topsoil and subsoil).

G. Locations of disposal and stockpile areas:

- Topsoil and subsoil storage areas.
- Overburden storage area.
- Waste, tailings, rejected materials.
- Raw ore stockpile(s).
- Tailings-ponds and other sediment control structures.
- Discharge points, water effluents (see #15[D]).

All maps should have a color code or other suitable legend used in preparation to clearly indicate surface features of the land affected. A general reference map completed on a 7.5 (1:24,000) USGS quadrangle sheet is recommended with additional large scale maps included for practical delineation of individual facilities, (e.g., 1:200, 1:500).

14. Acreage to be disturbed:

- A. Minesite (operating, storage, disposal areas, etc.): 27 acres
- B. Access/haul roads/conveyors: 43.8 acres
- C. Associated on-site processing facilities: 31.2 acres

15. Describe mining method to be employed, including:

A. Mining sequence:

- Map delineating the yearly sequential disturbance (if surface mine) and/or surficial disturbance.
- Narrative (including on-site processing or mineral treatment):

Refer to page 4a for mining and reclamation schedules

Refer to page 4b for actual acreage of disturbance and location of mine sites

Refer to page 4c for actual acreage of disturbance and location of facilities

Refer to pages 4d & 4e for mining narrative and schematic

Refer to pages 4f & 4g for processing narrative and flow sheet

Attach supplemental sheets and/or diagrams as necessary with cross reference to page number here: _____.

*Stratigraphic or lithologic logs if correlated to footage depths may be presented when labeled (maps or logs should be labeled confidential, if so desired).

MINING SEQUENCE

The mining sequence for Bonanza Operations is dependent on sales of gilsonite. Each vein contains ore of slightly different properties which our various customers specify, based upon their needs. Mining is projected annually on the basis of a ten year mining plan which is based on anticipated sales (refer to page 4b).

Mine development begins with the sinking of shafts on about 1,000 foot centers along the vein. Depth varies, depending on the vein, but may be as much as 1,000 feet. After connecting these vertical shafts by drifts (horizontal tunnels) in the ore,, mining starts in the block of gilsonite on both sides of the shaft (see schematic on page 4e). Hand labor is used underground to reduce contamination of the ore (by surrounding rock) to an absolute minimum. Miners, using air-driven chipping hammers, break the gilsonite working upward on a 40-45 degree angle. Broken ore falls by gravity to the bottom of the slope where it is pulled by vacuum into a 14" pipe for transport to the surface. Where gilsonite has been removed, timbers are placed from wall to wall at intervals to provide support and a working platform. A horizontal pillar of gilsonite approximately thirty feet thick is left between the surface and the mined out area. Fans located on the surface pull air that transports the ore to the top of the head frame where it is discharged into a 150 ton capacity bin. The air stream used to transport the material is filtered of dust particles before being discharged to the atmosphere. The ore is transported by truck from the holding bin to the processing plant.

Once the "reachable" gilsonite is completely removed, another shaft is developed farther along the vein and drifts installed for the sequence to begin again.

The "life" of a mine site usually varies between 5 and 10 years, depending upon the type of ore and market conditions. (This is explained more in page 4c - Processing.)

Occasionally, a mine site may become inactive and remain in that state for two to three years until the particular grade of gilsonite is required by users. During these stages, most equipment remains on site and are checked periodically.

MINING AND RECLAMATION SCHEDULE -- 1983

MINE SITE	STATUS	DEVELOPMENT SCHEDULED	RECLAMATION SCHEDULED	COMMENTS
Bonanza	16 Development	1985	Unknown	
	38 Active		1985	
	40 Abandoned		1985	Pump Station
	42 Active		1985	
	44 Active		1990	
Eureka	14 Active		1985	
	15 Active		1985	
	29 Active		1990	
	30 Active		1990	
	31 Pre-Development	1984	Unknown	
Harrison	1 Abandoned		1985	
	2 Inactive		Unknown	
	10 Inactive		Unknown	
Independent	9 Active		Unknown	
	10 Active		Unknown	
	15 Development	1983	1985	
	16 Active		1985	
	18 Abandoned		Unknown	Secondary Escape
	24 Active		1990	
Little Emma	3 Abandoned		1983	
	4 Abandoned		1985	Secondary Escape
	5 Active		1988	
	6 Development	1983	1990	
Pride of the West	3 Abandoned		1984	
	4 Abandoned		1984	
	5 Predevelopment	1984	1987	Proposed
	6 Predevelopment	1985	1988	Proposed
Rainbow	2 Abandoned		1985	
	3 Abandoned		1985	
	4 Abandoned		1985	
Wagonhound	11 Abandoned		1983	
	12 Inactive		Unknown	
	13 Predevelopment	1985	1990	Proposed

NOTE: Mining schedules vary with customer demand, thus the schedule will be updated yearly. Refer to page 4d for more descriptive information.

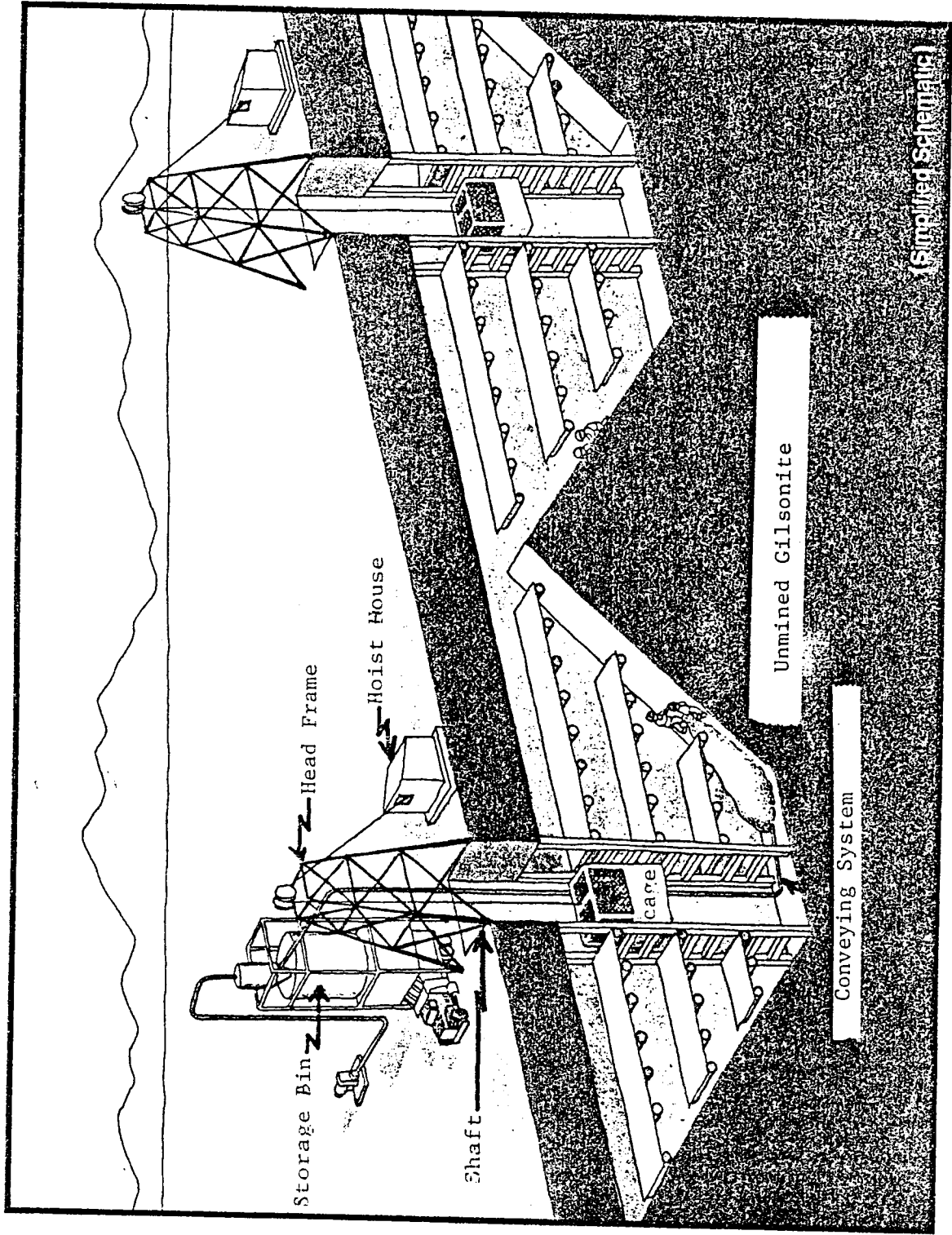
DISTURBED ACREAGE - NINE SITES

<u>MINE OR PROPERTY DESIGNATION</u>	<u>TYPE OF PROPERTY</u>	<u>NAME OF CLAIM</u>	<u>LOCATION</u>	<u>ACREAGE DISTURBED</u>
E-15	Pat. Claim	White River 20	NW $\frac{1}{4}$ Sec 12 T9S R24E	1 acre
E-14	Pat. Claim	White River 21	NW $\frac{1}{4}$ Sec 12 T9S R24E	1 acre
E-29	Pat. Claim	White River 23	SE $\frac{1}{4}$ Sec 2 T9S R24E	1 acre
E-30	Pat. Claim	White River 24	SW $\frac{1}{4}$ Sec 2 T9S R24E	1 acre
E-31	Pat. Claim	White River 25	SW $\frac{1}{4}$ Sec 2 T9S R24E	1 acre
I-9	Pat. Claim	Rangely Bell	SE $\frac{1}{4}$ Sec 23 T9S R24E	1 acre
I-10	Pat. Claim	Rangely Bell	SE $\frac{1}{4}$ Sec 23 T9S R24E	1 acre
I-24	Pat. Claim	Big Chief	SW $\frac{1}{4}$ Sec 23 T9S R24E	1 acre
I-18	Pat. Claim	Break of Day	NE $\frac{1}{4}$ Sec 22 T9S R24E	1 acre
I-16	Pat. Claim	Triumph	SE $\frac{1}{4}$ Sec 15 T9S R24E	1 acre
I-15	Pat. Claim	Cumberland	SW $\frac{1}{4}$ Sec 15 T9S R24E	1 acre
B-38	Fee		SW $\frac{1}{4}$ Sec 16 T9S R24E	1 acre
B-40	Fee		SW $\frac{1}{4}$ Sec 16 T9S R24E	1 acre
B-42	Fee		SW $\frac{1}{4}$ Sec 16 T9S R24E	1 acre
B-44	Fed. Lease		NE $\frac{1}{4}$ Sec 17 T9S R24E	1 acre
WH-12	Fed. Lease	U-0126940	SW $\frac{1}{4}$ Sec 27 T9S R24E	1 acre
LF-3	Fee	U-073071	SW $\frac{1}{4}$ Sec 30 T9S R24E	1 acre
LE-4	Fee		SW $\frac{1}{4}$ Sec 30 T9S R24E	1 acre
LE-5	Fed. Lease	U-0126938	SW $\frac{1}{4}$ Sec 30 T9S R24E	1 acre
LE-6	Fed. Lease	U-0126938	SW $\frac{1}{4}$ Sec 30 T9S R24E	1 acre
PW-3	Pat. Claim	Puck	SW $\frac{1}{4}$ Sec 9 T11S R24E	1 acre
PW-4	Pat. Claim	Bald Eagle	SE $\frac{1}{4}$ Sec 8 T11S R24E	1 acre
H-1	Fee		NW $\frac{1}{4}$ Sec 22 T11S R24E	1 acre
H-2	Fee		NW $\frac{1}{4}$ Sec 22 T11S R24E	1 acre
H-10	Pat. Claim	Merrimac	SW $\frac{1}{4}$ Sec 1 T11S R24E	1 acre
R-2	Pat. Claim	Turtle	NE $\frac{1}{4}$ Sec 25 T11S R24E	1 acre
R-3	Pat. Claim	Tennessee	SW $\frac{1}{4}$ Sec 24 T11S R24E	1 acre
R-4	Pat. Claim	Tennessee	SW $\frac{1}{4}$ Sec 24 T11S R24E	1 acre
B-16	Pat. Claim	Hilltop	NW $\frac{1}{4}$ Sec 23 T9S R24E	1 acre

201

DISTURBED ACREAGE - TOWNSITE, ROADS, PLANTS, & OTHER AREAS

<u>GENERAL DESCRIPTION</u>	<u>LOCATION</u>	<u>DISTURBED ACREAGE</u>
TOWNSITE (Bonanza)		
Residential Area (houses & roads)	SE $\frac{1}{4}$ Sec 23 T9S R24E	2.3 acres
Operating Area (buildings, plants, ponds, scales, & boneyard)	SE $\frac{1}{4}$ Sec 23 T9S R24E	5.7 acres
ROADS		
County Road to Pump Station	SW $\frac{1}{4}$ Sec 16 T9S R25E	1.4 acres
County Road to Crush Plant	SW $\frac{1}{4}$ Sec 15 T9S R25E	0.6 acres
County Road to Bins @ Crush Plant	NW $\frac{1}{4}$ Sec 16 T9S R25E	0.8 acres
Pump Station to Highway 45 along Eureka vein	NE $\frac{1}{4}$ Sec 17 T9S R25E	11.2 acres
Highway 45 to Eureka vein near E-21	NE $\frac{1}{4}$ Sec 23 T9S R24E	5.8 acres
County Road to I-15 along Independent vein	SE $\frac{1}{4}$ Sec 23 T9S R24E	3.1 acres
County Road to B-37 site	NE $\frac{1}{4}$ Sec 20 T9S R24E	2.5 acres
County Road to B-42	SW $\frac{1}{4}$ Sec 16 T9S R24E	1.4 acres
County Road to B-50	Sec 17 T9S R24E	2.0 acres
County Road to LE-5	SE $\frac{1}{4}$ Sec 30 T9S R24E	1.1 acres
County Road to WH-12	NE $\frac{1}{4}$ Sec 27 T9S R24E	2.3 acres
County Road to Harrison Camp	SE $\frac{1}{4}$ Sec 15 T11S R24E	3.7 acres
County Road to H-10	SW $\frac{1}{4}$ Sec 6 T11S R24E	2.8 acres
Harrison Camp to H-2 along Harrison vein	NE $\frac{1}{4}$ Sec 22 T11S R24E	2.1 acres
County Road to PW-4	NW $\frac{1}{4}$ Sec 16 T11S R24E	1.5 acres
County Road to R-1	SW $\frac{1}{4}$ Sec 24 T11S R24E	0.7 acres
PLANT AND OTHER AREAS		
Pump Station and Ponds	NE $\frac{1}{4}$ Sec 17 T9S R25E	3.8 acres
Crush Plant Area	NW $\frac{1}{4}$ Sec 16 T9S R25E	0.8 acres
Solar Pad Area	SW $\frac{1}{4}$ Sec 16 T9S R25E	0.5 acres
Reservoir	SW $\frac{1}{4}$ Sec 16 T9S R25E	2.3 acres
Explosives Magazine and Access	SW $\frac{1}{4}$ Sec 24 T9S R24E	1.1 acres
River Pump Station and Wells	SE $\frac{1}{4}$ Sec 2 T9S R24E	7.0 acres
Harrison Camp	NE $\frac{1}{4}$ Sec 22 T11S R24E	5.6 acres
E-21 Landfill	NW $\frac{1}{4}$ Sec 7 T9S R24E	2.1 acres
		<u>26.2</u>



Mining

PROCESSING

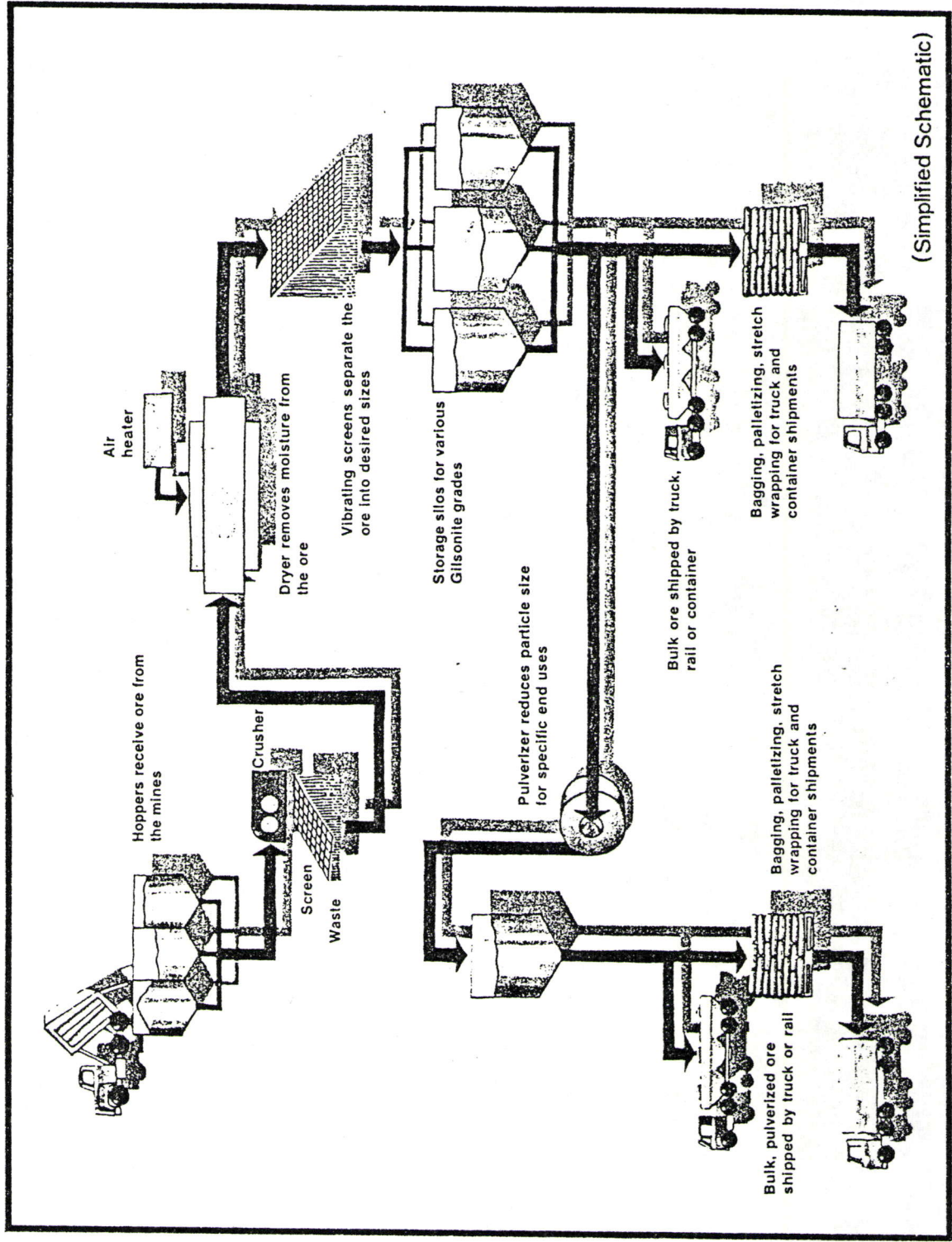
Gilsonite is classified by softening point and other properties into several basic product grades. Nature has separated gilsonite into veins with different properties. For example, gilsonite from the Bonanza vein has a different softening point than gilsonite from the Eureka vein. Since gilsonite is a naturally occurring product, there is some variation within a vein. However, careful segregation and processing assures adequate uniformity for each end use. This is controlled in the automated processing plant at Bonanza.

Ore from the mines is transported by truck and dumped into receiving bins used to segregate the ore prior to entering the plant. From the receiving bins, it is transported through the dryer where excess moisture is removed. The ore is then passed over a screen where it is classified according to particle size, after which it is transported to product silos for each particular product grade. From the silos the ore is fed to product bins where it is either loaded directly as bulk product, fed to the bag packer, or fed to the pulverizer. Pulverized product is segregated into product bins and can be loaded directly as bulk product or packaged through a second bag packer.

The modern and efficient mining and processing methods developed by American Gilsonite Company have overcome the dusty and sometimes hazardous conditions associated with early-day gilsonite mining. The vacuum air lift keeps the mine swept with a continuous flow of fresh air. In the processing plant, conveying of ore is either pneumatic or otherwise enclosed. Process air from both the mine and plant is filtered of all dust before being exhausted to the atmosphere. (Refer to Map II for facility location.)

TYPICAL GILSONITE COMPOSITION

Carbon	85.5%
Hydrogen	10.0%
Nitrogen	2.5%
Oxygen	1.5%
Sulfur	0.3%
Silica, Nickle and trace elements	0.2%
	<hr/> 100%



Processing and Packaging

- B. If sedimentary deposit seam(s): Refer to page 5a for a typical Cross-Section.
 (1) Thickness(es): varies, 1.2 feet to 15 feet
 (2) Dip: 75° to 90°
 (3) Outcrop: linear along claims, trends SE to NW

- C. Will any underground workings or aquifers be encountered? (X) Yes, () No. If yes, describe potential impacts and protection measures to be taken: Aquifers have not been nor are they anticipated to be encountered. Perched ground water has been encountered but not in a predictable manner. (Refer to page 5b for water depths.) This water must be removed to allow for mining of the gilsonite.

- D. Describe any active discharge or proposed discharge of water from mine or site area. Include water quality data and lab test reports. If attached sheets or reports are included, cross reference to page number here: _____.

Discharges are described in the attached NPDES Permit. (Appendix II) Mines which encounter water are pumped and discharge permits acquired. (Refer to page 5c for discharge locations and status.) (Refer to Appendix III for water quality reports and data.) More detailed information is presented on page 5e.

16. Have all necessary water rights been appropriated? (X) Yes, () No. How will water be obtained? Please explain: American Gilsonite is allotted 5.1 second feet of water from the White River.

17. Proposed or estimated duration of mining operation: 30 years (est.)
 Will the permit term be for a lesser amount of time, subject to review? (e.g., for surety estimate reasons). (X) Yes, () No. If yes, how long?
10 years.

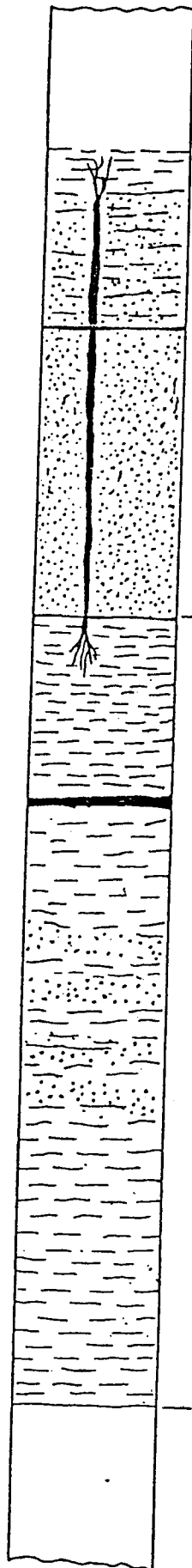
18. Describe the construction and maintenance of access roads including:
 A. Procedures (drainage and erosion control methods).
 B. Cross section(s).
 C. Profile(s) of proposed road grade(s).

Refer to page 5d.

Attach supplemental diagrams and cross reference to page number here: _____.

19. Prior land use(s): Wildlife and livestock grazing
 Current land use(s): Mining, wildlife and livestock grazing
 Possible projected or prospective future land use(s): Same as current uses above.

GENERALIZED STRATIGRAPHIC COLUMN



Duchesne River: Sandstones, mudstones and siltstones;
Red and yellowish brown; Thickness approximately 2500 feet.

Uinta Formation

Unit B: Sandstones and shales; Redish brown, gray and yellowish brown; Thickness approximately 500 feet.

Unit A: Sandstones; Yellowish brown, fine grained, massive;
Thickness approximately 800 feet.

Green River Formation

Parachute Creek member: Gray green and yellowish brown marlstone:
oil shales; Thickness approximately 500 feet.

Mahogany Zone: Oil shale beds

Douglas Creek member: Shales, siltstones and oolitic limestones;
Thickness approximately 1800 feet.

Wasatch Formation: Claystones, mudstones and sandstones; maroon, gray and brown.

ESTIMATED ORIGINAL

Page 5b Revised
(12/3/84)

GROUNDWATER DEPTH

<u>MINE SITE</u>	<u>COLLAR ELEVATION</u>	<u>DEPTH TO WATER</u>	<u>WATER ELEVATION</u>
B-38	5300	900 '	4400
B-40	5350	820 '	4530
B-42	5280	Not Encountered	----
B-44	5260	Not Encountered	----
E-14	5380	820 '	4560
E-15	5400	900 '	4500
E-29	5220	870 '	4350
E-30	5220	870 '	4350
E-31	5200	850 '	4350
H-1	5840	Not Encountered	----
H-2	5800	Not Encountered	----
H-10	5520	Not Encountered	----
I-9	5470	350 '	5120
I-10	5460	550 '	4910
I-15	5340	Not Encountered	----
I-16	5420	790 '	4630
I-18	5440	800 '	4640
I-24	5460	Not Encountered	----
LE-3	5380	510 '	4870
LE-4	5400	530 '	4870
LE-5	5330	520 '	4810
LE-6	5330	Not Encountered	----
PW-3	5620	Not Encountered	----
PW-4	5560	Not Encountered	----
R-2	6200	Not Encountered	----
R-3	6220	Not Encountered	----
R-4	6200	Not Encountered	----
WH-11	5620	Not Encountered	----
WH-12	5600	Unknown	----
E-16	5460	Unknown	----

NOTE: Water depths were estimated from old production records of which water depths were not normally kept.

EPA NPDES DISCHARGE LOCATIONS

<u>MINE SITE</u>	<u>LEGAL DESCRIPTIONS</u>	<u>STATUS</u>
E-31	SW $\frac{1}{4}$ Sec 3 T9S R24E	Discharging
E-30	SW $\frac{1}{4}$ Sec 2 T9S R24E	Discharging
E-15	NW $\frac{1}{4}$ Sec 12 T9S R24E	Discharging
E-14	NW $\frac{1}{4}$ Sec 12 T9S R24E	Discharging
E-29	SW $\frac{1}{4}$ Sec 2 T9S R24E	Discharging
E-21	NW $\frac{1}{4}$ Sec 7 T9S R24E	Not currently discharging
I-15	SW $\frac{1}{4}$ Sec 15 T9S R24E	Periodic Discharges
I-16	SE $\frac{1}{4}$ Sec 15 T9S R24E	Periodic Discharges
I-18	NE $\frac{1}{4}$ Sec 22 T9S R24E	Periodic Discharges
I-24	NW $\frac{1}{4}$ Sec 23 T9S R24E	Periodic Discharges
B-44	NE $\frac{1}{4}$ Sec 17 T9S R24E	Not currently discharging
B-40	SW $\frac{1}{4}$ Sec 16 T9S R24E	Not currently discharging
B-37	NE $\frac{1}{4}$ Sec 22 T9S R24E	Not currently discharging
B-14	NW $\frac{1}{4}$ Sec 23 T9S R24E	Periodic Discharges
LE-5	SW $\frac{1}{4}$ Sec 30 T9S R24E	Not currently discharging
LE-4	SW $\frac{1}{4}$ Sec 30 T9S R24E	Not currently discharging
LE-3	SW $\frac{1}{4}$ Sec 30 T9S R24E	Not currently discharging

NOTE: A filtering system is being developed and implemented at sites for lowering effluent pH using gypsum in the existing ponds.

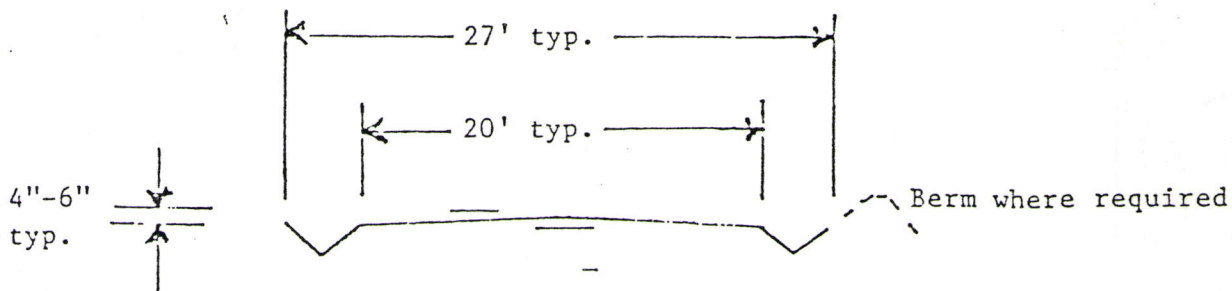
ROADS

Access roads are located in the best possible locations on Company property. If a better route on BLM or State land is available, application for Right-of-Way is submitted. Road grades are kept as low as possible, but in no case do they exceed ten percent (10%). Roads are constructed with a crowned center and bar ditches along the sides. Berms must be provided along all elevated sections to comply with Federal Safety Standards (MSHA 57.9-22). Berms are seeded with the same seed mix used (pb. 10b) for the mine sites in the area affected. Crossings over washes are generally accomplished using dip type crossing to prevent siltation and ponding. If required, culverts are installed to prevent wash out. All roads are maintained with motor grader as required.

Road berms typically are comprised of 50 cubic yards maximum of topsoil per 100 linear feet of road, $\left(\frac{\text{depth} \times \text{width} \times \text{length}}{27 \text{ cu ft/yd}} \right)$ or $\frac{.05 \times 27 \times 100}{27} = 50$.

Mine Site Inventories (Appendix I) list individually the quantity of topsoil salvaged and stored in berms.

Road Cross Section



Mining of Gilsonite is hampered by the presence of perched ground water that frequently infiltrates the veins. Individual mines must be de-watered prior to and during mining operations, refer to 5c for locations. Prior to discharge, the water is passed through a settling pond, then a gravel filtration bed to remove any debris that results from mining. The cleansed water is then discharged into dry washes which connect with Coyote Wash, which in turn, connects to the White River, refer to Map I. When only small amounts (approximately 5,000 gallons per week) of water is encountered, it is retained in evaporation ponds, thus no discharge. Pond design has been approved by the Utah Department of Health, see correspondence Appendix II.

Coyote Wash supports an ephemeral stream which flows only during the spring for one (1) or two (2) months during the runoff. During this period, is the only time water from the operation reaches the White River. The remainder of the year, water flows less than three (3) miles from the last discharge location before it re-enters the ground. The distance between the end of the discharge flow and the White River is approximately twenty (20) miles.

The effect of the discharged water on the surrounding environment is beneficial. It is the only continuous flowing source of water in the immediate area for wildlife such as antelope, deer and wild horses. Domestic sheep graze the vicinity and also utilize the water. Further, the discharges have produced a desert oasis of green vegetation approximately five (5) miles long.

20. Describe methods of tree and brush removal: Tree and brush removal is all done using either backhoe, grader or cat type dozer. When cover is low, the brush and grasses are mixed with the top soil when scraped for stockpiling.

Provide estimate of, and method of obtaining existing vegetation cover (%):
Refer to page 6a and 6b.

What types of dominant vegetation are present? Shadscale, Sagebrush, Pinyon and Juniper. Refer to Appendix IV

Photographs and/or maps may be attached to these forms, cross reference to page number here: _____.

21. Soils (surficial plant supportive material) and overburden: Except where slope or rocky terrain make it impossible, all surficial materials suitable as a growth medium shall be removed, segregated and stockpiled according to its ability to support vegetation (as determined by soil analysis and/or practical revegetation experience) prior to any major excavation. (Suggested minimum requirements are the top six inches, or the "A" horizon, whichever is larger.)

- A. What is the pH range of the soil before mining? 7.8 to 8.7
Name of person or agency and method of determining pH: Utah State Soils Testing Lab - Saturated Paste Method. Lab report presented as Appendix V.
Attach lab report if available. Cross reference page number here: Refer to page 6c and 6d for general soils information & Appendix I for
- B. Average depth of topsoil and subsoil to be stripped and stockpiled: specifics. 5.5 inches. Calculated volume of soil to be stockpiled: The depth and volume depends upon the individual mine site, refer to Appendix I.
- C. Describe the method for removing and stockpiling topsoil and subsoil, including measures to protect topsoil from wind and water erosion, compaction and pollutants: Refer to page 6e for top soil salvage and storage. Refer to page 6d for top soil suitability criteria and existing conditions.
- D. Describe the method for removing and stockpiling overburden. Describe and discuss the acidity or alkalinity (pH) or other characteristics which would affect revegetation: Since gilsonite is nearly 100% pure, there is no overburden. Mining is by underground methods, see page 4d.

EXISTING VEGETATION COVER

During June of 1983, a total of 15 random transects were conducted near existing, proposed or abandoned mine sites to determine percent vegetation cover. The location of each transect is noted on the site analysis sheets provided as Appendix IV. The transects were conducted by stretching a 100 foot cloth tape across non-disturbed areas within 500 feet of individual mine sites. Table 1, page 6b, presents a summary of the 15 transects.

The areas around the mine sites were found to be comprised of three basic vegetative types: Pinyon-Juniper, Sagebrush and Shadscale. Percent cover ranged from a low of 4.3% at Pride-of-the-West to 25.85% at Wagonhound, with an overall average of 14.99%, see Table 1, page 6b.

Reclamation will be considered successful when after at least three growing seasons, a cover of 70% of original is obtained.

Page 6b TABLE 1 SUMMARY OF TRANSECTS TO DETERMINE VEGETATION COVER PERCENT

JUNE 1983

NEAREST SITE	TRANSECT	TRANSECT % COVER		TOTAL	COVER TYPE
		OVERSTORY	UNDERSTORY		
B-38	1	10.1	1.85	11.95	Sagebrush
B-44	2	15.2	---	15.2	Sagebrush
E-29 & 14	3	11.2	3.4	14.6	Sagebrush
H-1 & 2	4	17.60	.15	17.75	Juniper
H-10	5	14.8	5.4	20.2	Juniper
I-9 & 10	6	18.2	.5	18.7	Sagebrush
I-15	7	12.2	.3	12.5	Sagebrush
LE-6	8	2.7	5.7	8.4	Sagebrush
PW-2	9	4.0	.3	4.3	Sagebrush
PW-undst *	10	15.9	---	15.9	Riparian
PW-undst *	11	10.4	.2	10.6	Juniper
PW-undst *	12	8.7	3.1	11.8	Shadscale
R-2 & 3	13	16.8	4.6	21.4	Juniper
R-4	14	14.6	1.1	15.7	Juniper
WH-12	15	24.35	1.5	25.85	Sagebrush

* These are proposed mine sites and therefore the transect is of the actual mine site.

SOILS

Soil was sampled at each mine site to determine the suitability for re-vegetation (see page 6d). Where topsoil existed, it was sampled. If there was no topsoil salvaged, the sample was then collected from the center of the mine site. Laboratory analysis is presented in Appendix IV. Analysis for each individual mine site sampled has been transposed onto the individual "mine site data" sheets, see Appendix I.

The pH of the soil sampled was found to range between 7.8 and 8.7.

Prior to reclamation of an individual site, soil analysis of the site will be compared to the suitability chart presented on page 6d. Should deficiencies or imbalances of conditions be present, resulting in non-suitable conditions, soil amendments will be made. These amendments will consist of any or all of the following: mulching at 2,000 pounds per acre, addition of phosphate, nitrogen, potassium, calcium sulfate or any other additive that may be required. Plans for the individual sites will necessarily be site specific and will receive concurrence from Utah Department of Oil, Gas and Mining personnel prior to reclamation procedures.

TOPSOIL SUITABILITY CRITERIA AND EXISTING CONDITIONS

Parameter	Good	<u>Suitability</u> Fair	Poor	Range for AGC Soils
Electrical Conductivity (EC)	0-4	5-8	9-16	0.3-19.0
Nitrogen (NO ₃ -ppm)	NA*			0.1-165
Organic Carbon (%)	NA*			.28-10.6
Phosphorus (PO ₄ -ppm)	NA*			0.3-38.0
pH (Activity at 25°)	6.1-7.8	5.1-6.1 7.9-8.4	8.5-9.0	7.8-8.7
Saturation (%)	25-80	80; 25		25.1-62.4
Sodium Absorbtion Ratio	0-6	6-10	11-15	0.6-40.0
Potassium (ppm)	>60	<60		0.4-38.0
Textures (USDA class)**	sl, l, sil, vfsl, fsl	scl, cl, sicl, ls, lfs	sic s	sl, l, sil, scl, vfsl, fsl, cl sicl, sc, ls, lfs

*NA = Not applicable as fertilizers are to be used. Refer to page 10a.

** sl - sandy loam, l = loam, sil = silty loam, scl = sand clay loam,
vfsl = very fine sandy loam, fsl = fine sand loam, cl = clay loam,
sicl = silty clay loam, sc = sand clay, ls = loamy sand,
lfs = loamy fine sand.

TOPSOIL STORAGE AND PROTECTION

The Mine Safety and Health Administration (MSHA) requires roads to be bermed for safety purposes in certain instances. Rather than disturbing more land to collect material for these berms, the topsoil, when scraped for road construction purposes, will remain at the side of the road serving as a berm. These berms will then be seeded with the same seed mix to be used for final reclamation of the site.

Topsoil will be stockpiled in the following manner by dozer or bucket loader.

1. Stockpiles will be located on relatively level areas, protected from wind, water erosion, vehicular traffic, and contaminants. Stockpiles will be constructed on upland areas to minimize drainage into stockpile areas.
2. Stockpiles will be rectangular in shape to accommodate equipment capabilities.
3. Grading and contouring will be directed towards the creation of maximum out slopes of 2H (horizontal) to 1V (vertical).
4. Topsoil to be stockpiled for greater than six months will be seeded to control erosion. The seed mix designated for the site will also be used on the stockpile, since most piles should be quite small. Seeding will be conducted during April and May or October and November. Fertilizer will be applied the first spring following seeding.
5. All stockpiles will be marked with "Topsoil Stockpile/Do Not Disturb". Current topsoil stockpiles are presented with the individual mine inventory data sheets.
6. Refer to Topsoil inventory, page 6f for status.

TOPSOIL INVENTORY

Site	Stock ₃ Pile Yards	Berms ₃ Yards	Total ₃ Yards
B-16	200	100	300
E-14	---	100	100
E-15	---	100	100
E-29	---	100	100
E-30	50	50	100
E-30	---	100	100
H-1	---	---	---
H-2	---	50	50
H-10	166	50	216
I-9	---	---	---
I-10	---	---	---
I-15	184	10	194
I-16	---	---	---
I-18	---	---	---
I-24	---	---	---
LE-3	---	---	---
LE-4	---	---	---
LE-5	---	50	50
LE-6	185	100	285
RW-2	---	---	---
RW-3	---	---	---
RW-4	---	---	---
WH-12	---	---	---
			<hr/> 1595

- E. Rock subjected to processing such as waste rock, tailings, etc., and which is to be disposed of on- or off-site must be subjected to a toxicity analysis. The method of determination, results and suitable disposal methods must be explained in detail, including means for containment and long range stability*: Gilsonite is a naturally occurring non-toxic hydrocarbon which is insoluble in water. It is mined in a near pure form and processing consists of screening, grinding and packaging. Rock removal from shaft sinking is stored on the surface near the shaft and returned to the shaft upon final reclamation. Rock resulting from the screening of gilsonite is disposed of in an open cut located near the Plant, refer to Map II. The waste rock is typically of the Duchesne River formation or the Uinta Formation. Refer to page 5a.
-
-
-
-
-
-

22. Describe the methods used to minimize public safety and welfare hazards during and after mining operations including:

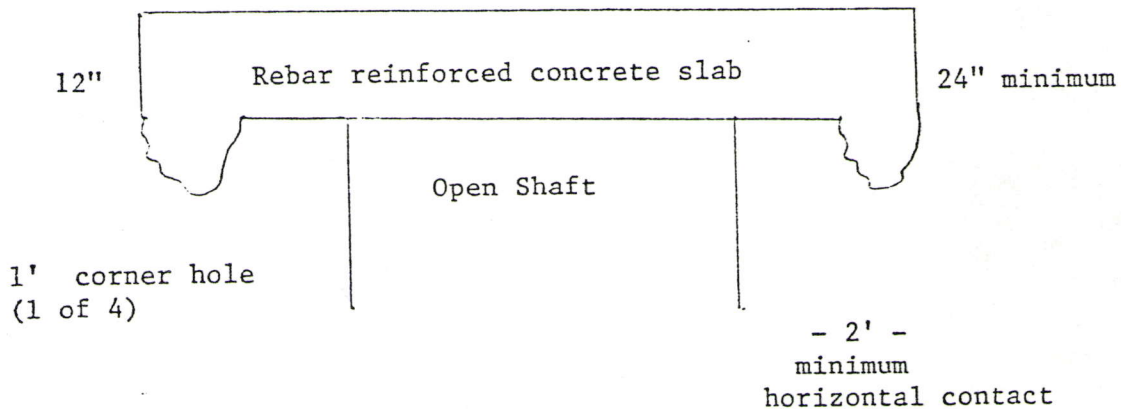
- A. Shaft, tunnel and drill hole closure.
B. Disposal of trash, scrap metal and wood and extraneous debris, waste oil and solvents, unusable buildings and foundations, sewage and other materials incident to mining.
C. Posting of appropriate warning signs and/or fences or berms to act as barriers (e.g., above highwalls) in locations where public access is available.

Refer to page 7a

*"Toxic" means any chemical or biological or adverse characteristic of the material involved which could reasonably be expected to negatively affect ecological or hydrological systems or could be hazardous to the public safety and welfare.

- A, C - It is the policy of American Gilsonite to keep all open veins fenced and posted and to periodically inspect these fences and repair as necessary. All active mine shafts are fenced, and abandoned mine shafts are either fenced or capped with a twelve inch thick reinforced concrete slab. Refer to schematic below.
- B - All non-usable trash (wood, municle trash, paper, etc.) is disposed of at the Company's E-21 LANDFILL site. Scrap metal which can be re-used or re-cycled is stored in the SALVAGE YARD near Bonanza. Waste oil and solvents are returned monthly to vendors for re-cycling. Sewage for the CAMP area is discharged into evaporative ponds north of the townsite in accordance with EPA permit UT-0020451, refer to Map II.

Refer to Appendix II for Landfill permit.



23. Grading and soil redistribution.

- A. Attach pre- and postmining contour cross sections, typical of regrading designs. Cross reference to page number here: N/A.
- B. Describe the method(s) of overburden replacement and stabilization and highwall elimination, including: (a) slope factors; (b) lift heights; (c) compaction; (d) terracing, etc., (e) also include testing procedures: Not applicable for an underground mine.

- C. What method of spreading topsoil and subsoil or upper horizon material on the regraded area will be employed? Soil will be respread using dozer, grader and/or back hoe type equipment. Measurements will be made to ensure equal distribution.

1. Indicate the approximate depth of soil cover after final surfacing depends on mine site inches. Refer to Appendix I for individual sit
2. What tests will be performed to adequately evaluate the potential of the soil to successfully support intended revegetation? Water soluble Na and Ca + Mg, pH, ECe, NO₃, P, K, Lime, SAR, OC, SP, Texture, Extractable Na and Mg. Refer to page 6d.

3. What soil amendments or fertilizers will be needed as an aid to revegetation? See reclamation and study plots page 10a, and individual mine site forms Appendix I.

Type: _____	Rate: _____
Type: _____	Rate: _____
Type: _____	Rate: _____

4. What additional surface preparations will be used? Describe (a) drainage, erosion and sediment control measures; (b) maximum slope characteristics; and (c) highwall reclamation.

Scarification of compacted soils
Settling and evaporation ponds where & when required
Ditching and berms where and when required
Contour furrows where applicable
Reclaimed slopes will not exceed 3H : 1V
There are no high walls

Item 4

Site reclamation will be performed during the fall (September-November) following abandonment of an individual mine. Preliminary results from reclamation plantings of fall 1983 and spring 1984 indicate that fall reclamation will be the most successful in the desert climate of Bonanza.

All equipment and structures will be removed completely from the site. The shafts will be sealed with a cement pad as described on page 7A. The site will then be ripped by a dozer to a minimum depth of eight (8) inches.

Most locations are currently or are anticipated to be approximately level. However, those that are not will be returned as close to the original contours as possible. Slopes are not expected to exceed 2H:1V in any case.

When reclaimed slopes are steep, contour trenches will be constructed to catch sediments from runoff. These trenches will reduce the velocity and scouring ability of any surface flow and provide increased retention of water and slow the release of runoff through improved infiltration.

Following recountouring and ripping of the site, topsoil salvaged prior to mining will be spread by dozer to a thickness equivalent to the coverage depth prior to its removal. Mulch may be added at this time, depending upon the test results, past and future. The mulch will be either spread by hand or automated spreader at a rate of two thousand (2,000) pounds per acre. Seed and fertilizer will then be added. If seeded and fertilized by broadcast methods, the site will be crimped by "walking" a dozer over it. If seeded by the Laird Seed Drill, crimping will not be necessary as the drill performs this while seeding.

Most fertilizer admendments will be spread at the time (fall) of reclamation. Nitrogen, when needed, will be spread in the spring. Refer to page 10a for fertilizer rates. Because of the wide soil diversity experienced over the operation, each mine site must be treated separately, thus no "generic" plan is possible. Refer to the individual mine site inventory sheets in Appendix I for soil specifics.

5. Describe methods which may be particularly applicable to waste disposal areas determined to be potential problem areas.
Ore storage ponds remaining from the times of wet processing may present some revegetation problems. These areas will be eliminated as time and market conditions permit. Chevron has drilled, seeded and mulched areas in the ore storage pond south of the Processing Plant. Refer to page 10d. Refer to page 10a for more detail.

- D. Describe plans for either leaving or reclaiming the roads and pads associated with the operation.

Major access roads are part of the network used by the public in this area and are on BLM land. These main roads will not be reclaimed. Roads used specifically to access mine sites and facilities will be relaimed as soon as the sites associated with them are completely reclaimed by filling in barrow pits, roughing the surface and reseeding. Where necessary to prevent further traffic, ditches or fences will be installed at the ends of the roads.

24. ~~Impoundments~~: All evaporation, tailings and sediment ponds; spoil piles, fills, pads and regraded areas shall be self-draining and nonimpounding when abandoned unless previously approved as an impounding facility by a lawful state or federal agency. In view of this, please describe the reclamation of all related areas in the operation and include pertinent items enumerated in C, 1-5 above.

Ponding is used on American Gilsonite property, mainly for sedimentation to remove suspended solids prior to water discharge under EPA permits. An evaporation pond is used in conjunction with the Bonanza sewage system. Upon abandonment, these ponds will be removed, or at least left non-impounding, topsoil replaced, roughed and seeded. These hydrologic structures will be reclaimed within one year of their abandonment. If mining continues for 30 years, the reclamation will be completed in 30 plus 1 (31) years.

Refer to pages 9b, 9c and 9d for sewage lagoon, settling pond and storage reservoir schematics.

25. Revegetation plans:

- A. What organization, agency or person will specifically be performing the revegetation? CHEVRON RESOURCES.
- B. Will the affected area be subject to livestock or wildlife grazing?
(X) Yes, () No. Will vegetation protection be needed to allow for a determination of the successful revegetation criteria outlined in the Mined Land Reclamation Act, Rule M-10(12)? (X) Yes, () No. If yes, what measures will the operator take? Fencing of reclaimed areas may become necessary in the future, until reclamation tests and plots are 1 or 2 years along

- C. Will irrigation be used? () Yes, (X) No. Type: _____
_____. For how long? _____.

Surplus raw gilsonite is currently being stored in wooden surface bunkers. These bunkers were formerly used as solar drying pads when wet mining methods were used. Alternatives are being considered for discontinuing these bunkers. Conventional handling and storage methods of gilsonite is difficult because of the explosive characteristics of the dust created during handling. It is, therefore, not a simple matter of constructing a warehouse to store the raw product. This problem has plagued the industry since its inception.

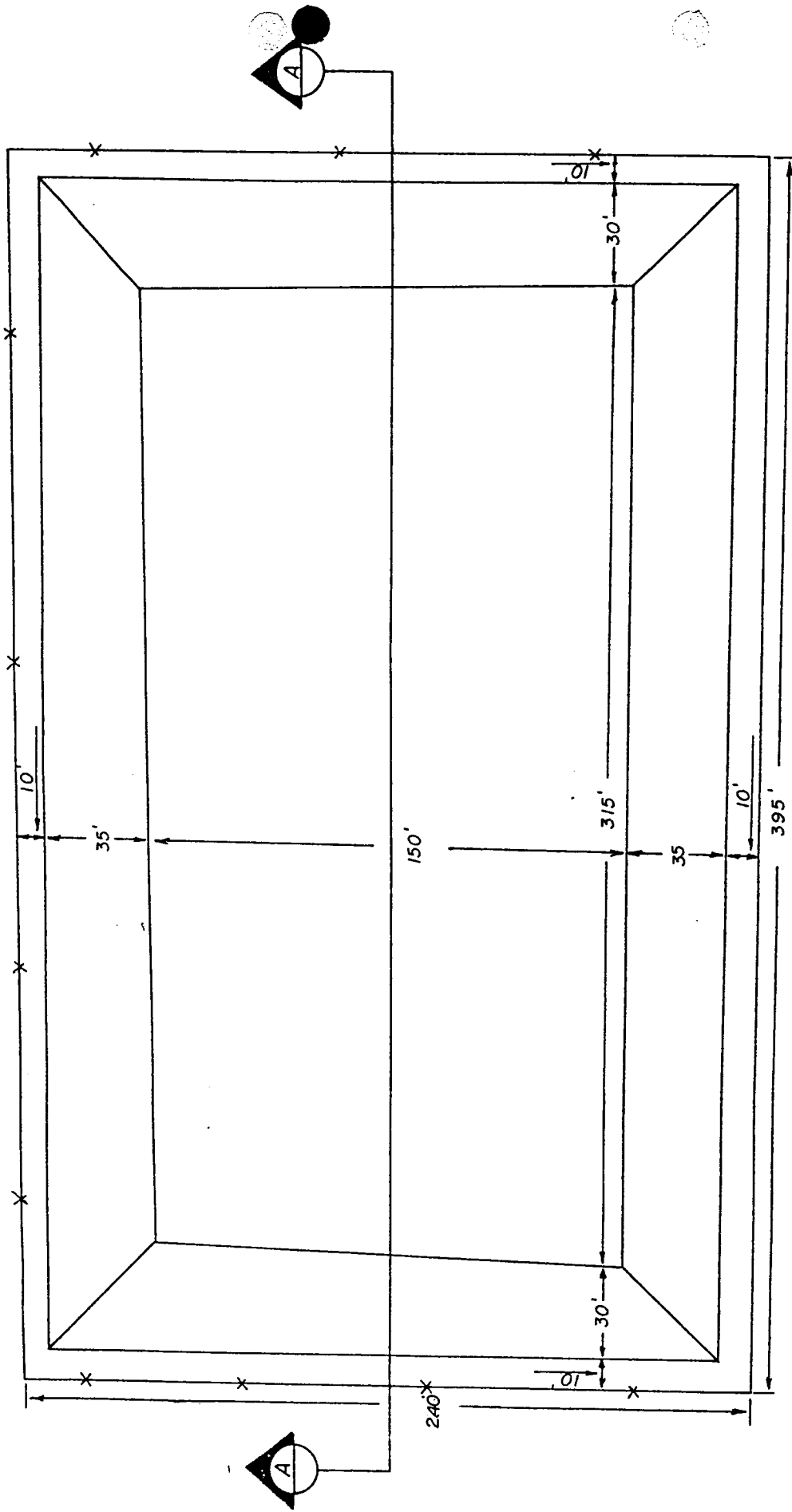
Chevron is currently conducting engineering and feasibility studies to determine the most efficient method of storage.

The following alternative are being examined.

1. Re-construction of the existing bunkers and
 - a) using plastic covering or
 - b) utilizing chemical tackifiers as a dust suppressant
2. Construction of underground bunkers or the utilization of open cuts near the Processing Plant
3. Construction of additional silos similar to those already in use

The feasibility studies will be conducted on the above alternatives and possibly others during 1985. Engineering and design will extend into 1986.

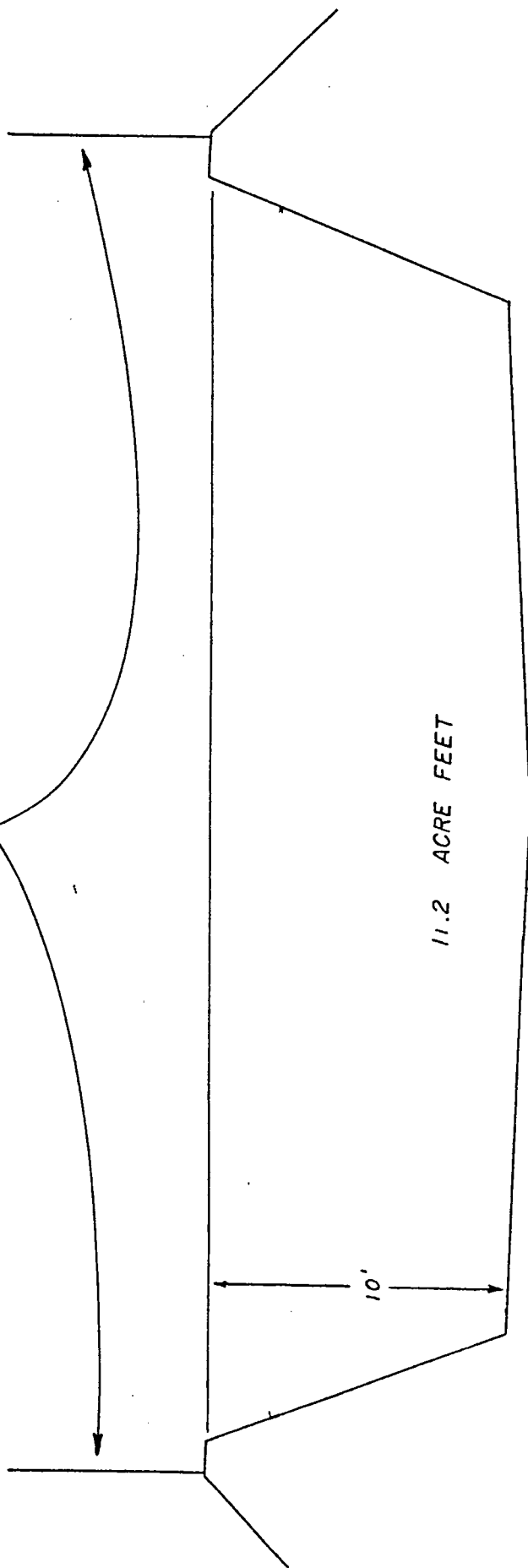
Reclamation of the solar pads will be conducted within one year of their termination. The techniques and plant species used will depend upon the results of the storage pond revegetation studies referred to on page 10a.



SEWAGE LAGOON

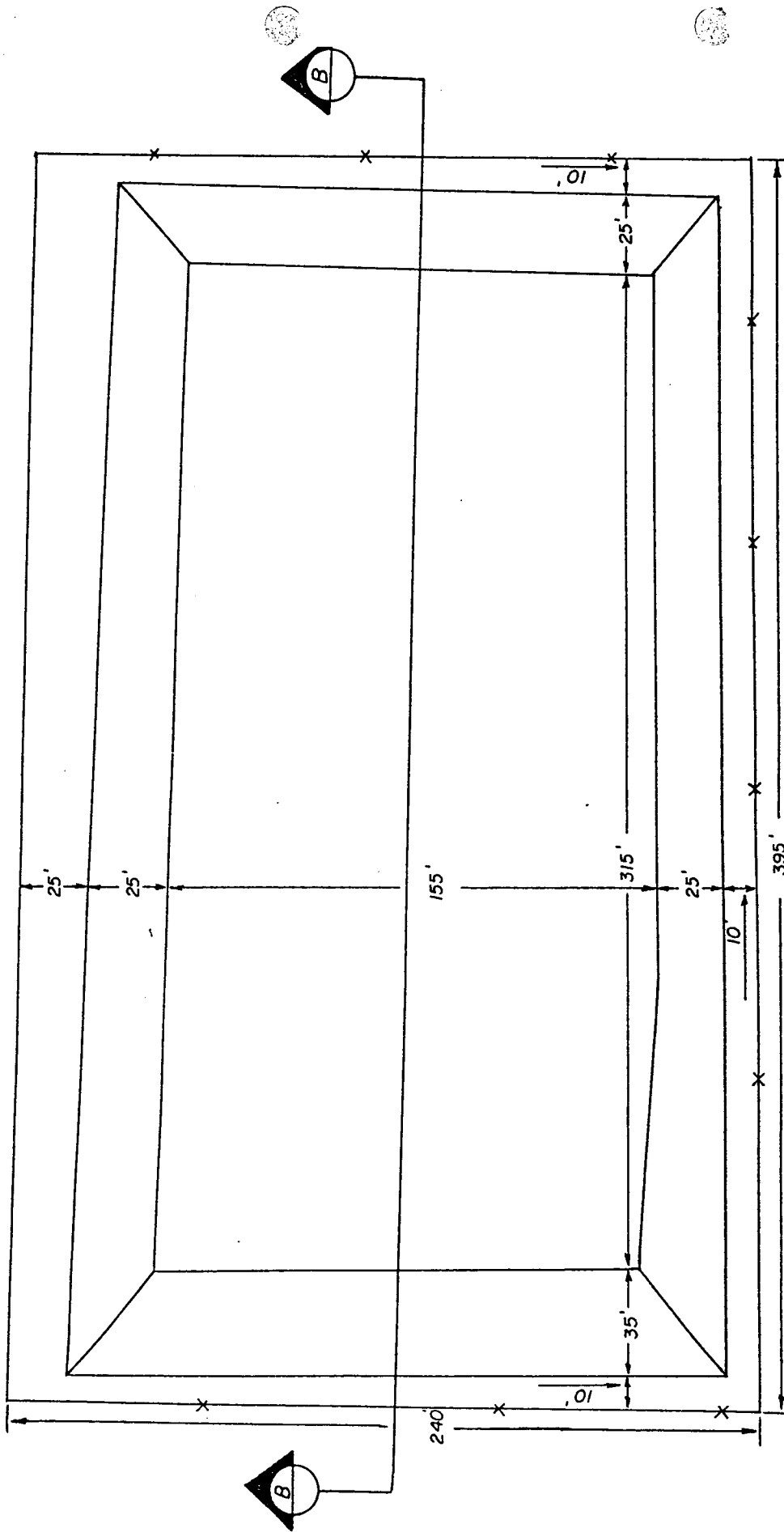
NOTE: WATER LEVEL REMAINS BELOW 6". STORM RUNOFF DIVERTED
AROUND STRUCTURE TO COYOTE WASH.

6' CHAINLINK FENCE



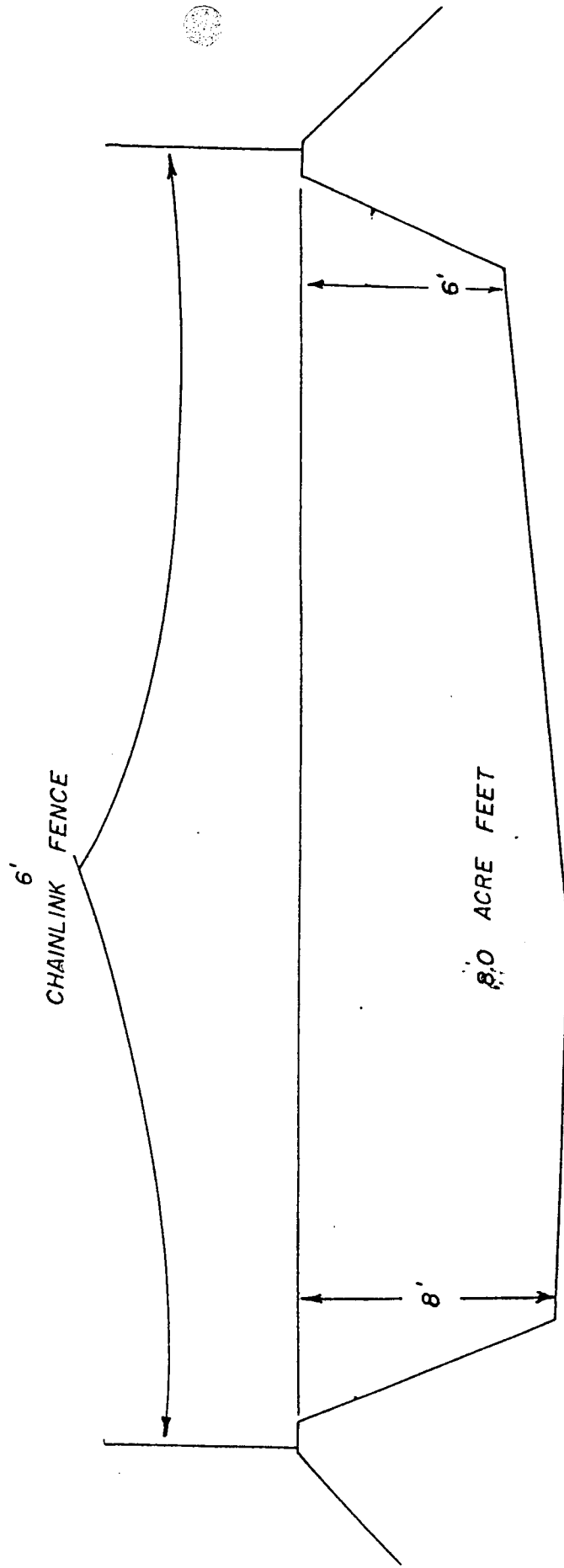
— SECTION A —

SEWAGE LAGOON

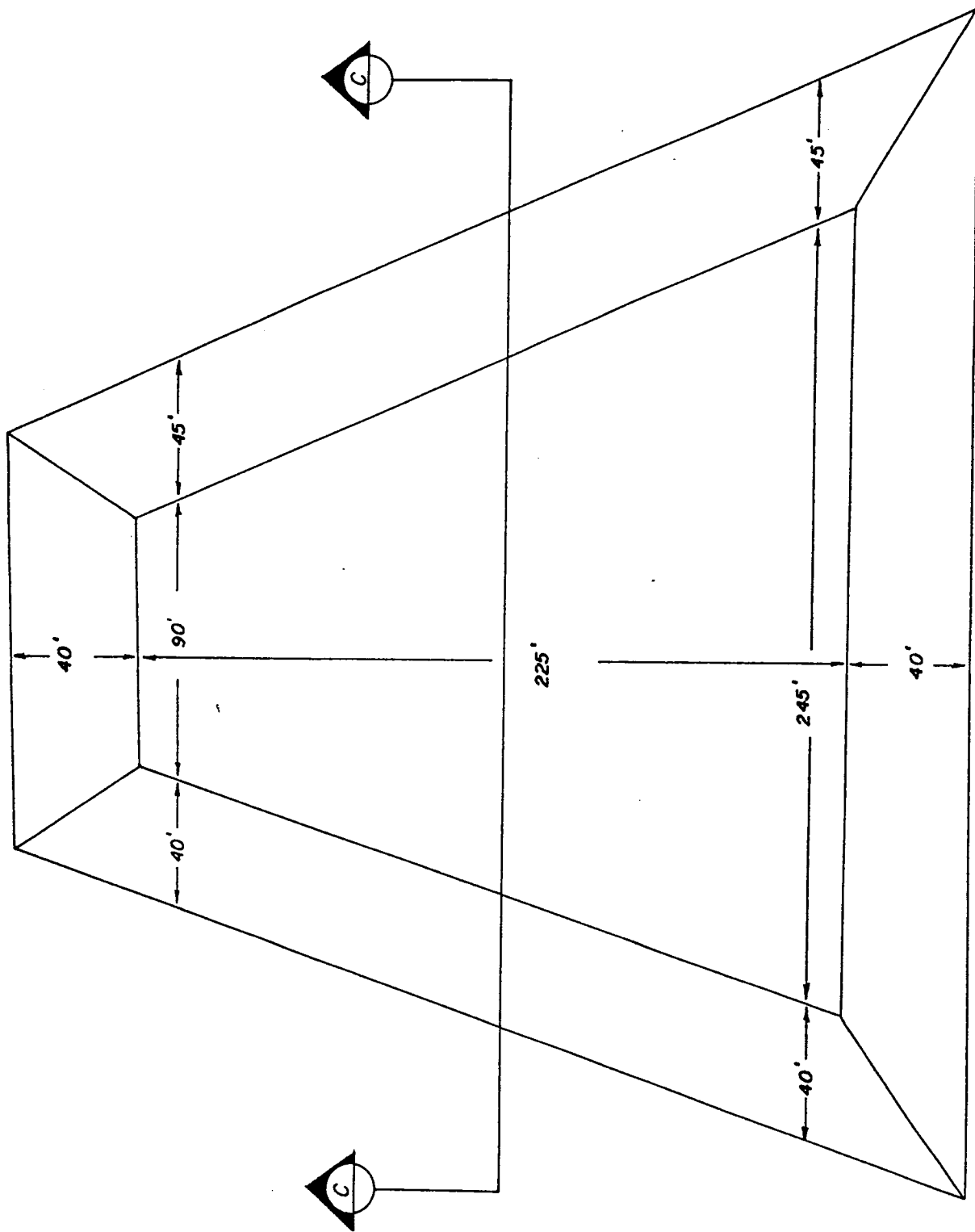


FORMER STORAGE POND

NOTE: WATER LEVEL CURRENTLY UNDER 6". STORM RUNOFF DIVERTED
AROUND STRUCTURE TO COYOTE WASH.

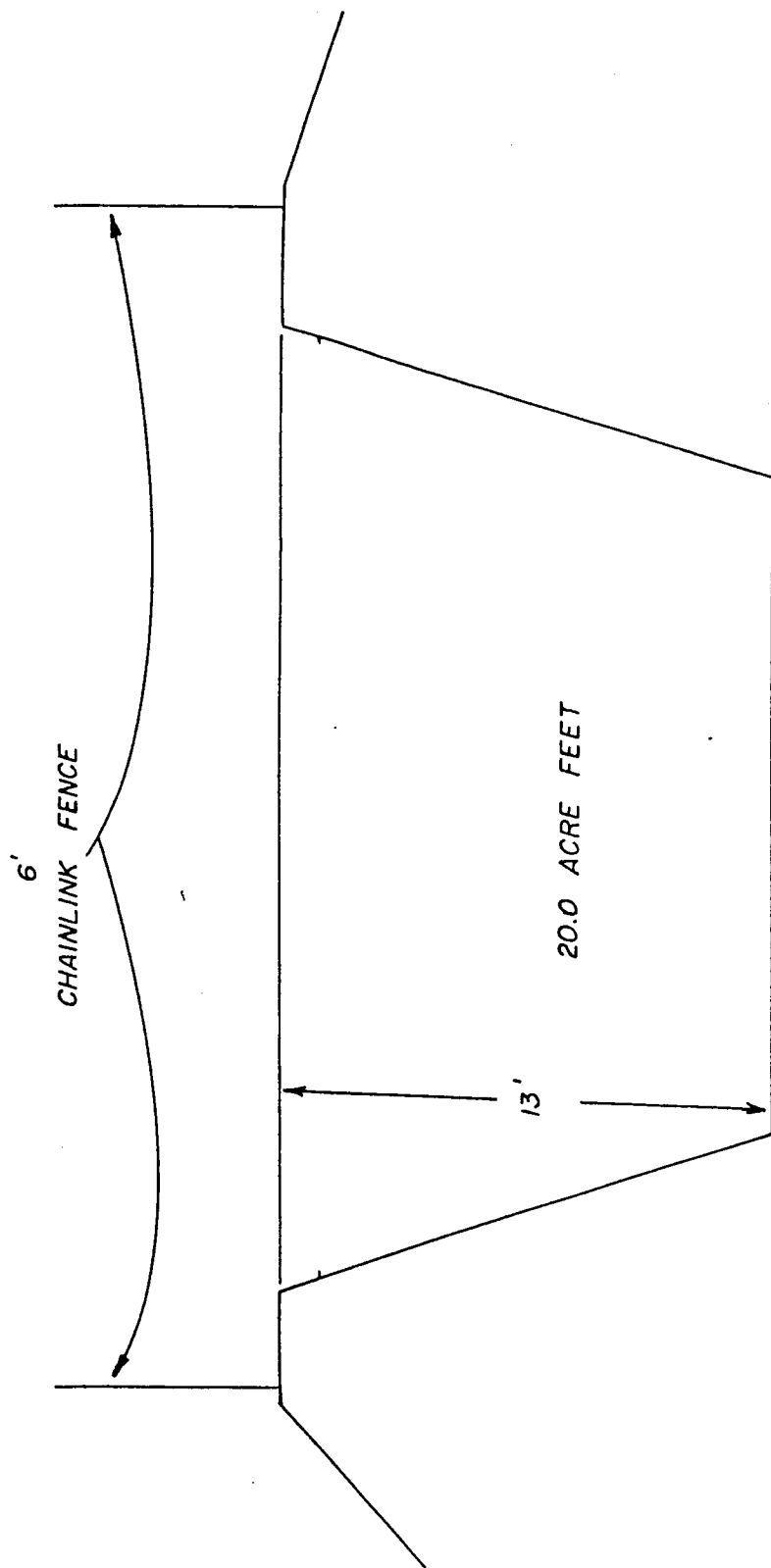


— SECTION B —
FORMER STORAGE POND



STORAGE RESERVOIR

NOTE: WATER LEVEL AT CAPACITY. STORM RUNOFF DIVERTED AROUND STRUCTURE TO COYOTE WASH



— SECTION C —
STORAGE RESERVOIR

- D. Test plots initiated during the early stages of mine development provide good bases from which a successful revegetation program can be adapted for later implementation. Will test plots be employed? (x) Yes, () No. If yes, describe on an additional sheet(s) and attach. Cross reference page number here and show location on facilities map: page 10a & Map II.
- E. Please attach a revegetation plan and schedule including:
1. Species to be used. page 10b
 2. Rate of seed application/acre. 12.0 drilled, 18.0 broadcast; (PLS)
 3. Season to be planted. April-May and October-November
 4. Seedbed preparation techniques. page 10b
 5. Planting location, slope face direction, variability, method of application, covering, etc. page 10b
 6. Mulch and fertilizer application, if used. page 10b
- F. Describe any other maintenance procedures which may be used, if needed, to guarantee successful revegetation: Results of the study plots will aid in determining procedures that may be required.

26. Please provide a reclamation schedule including: Reclamation will be started within six (6) months of abandonment of individual mine sites.
- A. Estimated time for construction.
 - B. Estimated time for interim reclamation Seeding of sites and topsoil stockpiles is to be conducted
 - C. Estimated duration of the mining operation. 30 years upon construction of each new mine site.
 - D. A time table for the accomplishment of each major step in the reclamation plans. Attach the schedule and cross reference to the page number here: page 4a and 10c.
27. A surety guarantee must be provided for the mining operation (see Rule M-5 Mined Land Reclamation Act). In calculating this amount, the Division will consider the following major steps based on the information provided in this report:
- A. Clean up and removal of structures.
 - B. Backfilling, grading and contouring.
 - C. Topsoil and subsoil redistribution and stabilization.
 - D. Revegetation (i.e., preparation, seeding, mulching, irrigation).
 - E. Labor.
 - F. Safety and fencing.
 - G. Monitoring, and reseeded if necessary.

To assist the Division, the operator may attach a list of costs and factors which would satisfy these areas. Substantiation of these factors, i.e., unit costs and how they are derived, should accompany the list. Cross reference the page number here: 10e and 10f.

28. A request for a variance from specific commitments to Rule M-10 (Reclamation Standards) of the Mined Land Reclamation Act may be submitted with adequate written justification. If after presentation of information adequately detailing the situation, a determination is made that finds a portion of the rule inapplicable, a variance may be granted by the Division.

RECLAMATION AND STUDY PLOTS

The purpose of studies being developed at the facility and abandoned mine sites is to show results which will be obtained using various seeding methods, fertilization and mulching. These plots should be representative of the majority of the sites, in that there are some areas with large amounts of gilsonite mixed with the topsoil, as well as areas that are relatively free of gilsonite. Also, some of the areas have a rocky soil base. (See Map II for locations.) A single seed mix will be used. (See Table 2, page 10b.)

The areas to be reclaimed are: The facility area, one ore storage pond, exploration pads and roads and six abandoned mine sites. The mine sites for reclamation are: Eureka 21, Little Emma 3, Pride of the West 3 and 4 and Wagonhound 11. For a listing of all areas, scheduled and treatment, see Table 3, page 10c.

Facility Area

The facility area has been divided randomly into three areas. These divisions are: broadcast seed, drilled seed, and an area drilled and broadcast in rows with 0-45-0 fertilizer applied with a broadcast at 100 lbs P_{205} per acre. (See figure 1 page 10d.) These areas were all scarified before any seeding took place.

The broadcast areas were seeded with a chest type cyclone seeder and hand broadcast at a rate of 18 pounds per live seed per acre. After seeding, the seed was covered by dragging the area.

The drilled areas were seeded at a rate of 12 pounds pure live seed per acre. A 12 foot wide Laird rangeland drill was pulled by a tractor to do the seeding.

Storage Pond

One ore storage pond was reclaimed in the fall of 1984. This area was re-contoured, then the dam was leveled and the soil from it spread over the pond area. This area was then seeded, using the drill while the soil was still loose. Mulch was applied to approximately one third of the area at the rate of 2,000 pounds per acre.

Mine Sites

Mulching was tried at two mine sites, E-21 and Pride-of-the-West 3, to determine if better growth could be obtained. Approximately 2,000 pounds per acre of weed free mulch was applied by hand on a portion of Pride-of-the-West 3 and on one acre of Eureka-21. Since Pride-of-the-West 3 is to be

Mine Sites (Continued)

broadcast seeded, the mulch was spread after seeding, then crimped into the soil by walking on it with a dozer. At Eureka-21, the mulch was applied before drill seeding so the furrow opener could incorporate the mulch into the soil.

These areas will be observed in future years to determine the best practices and seed types to get the maximum benefit. The sites will be sampled in identical methods used originally and at the same time of the year.

Fertilizer was applied on Pride-of-the-West 3 and 4 at the equivalent rate of 100 pound per acre of 20/30/30.

The first year growth was sparse, thus no formal growth inventory was conducted.

Growth of several immature grasses, sagebrush, rabbitbrush and winter fat were noted in July 1984 at random.

TABLE 2

SEED MIX BEING USED ON STUDY AREA AND MINE SITES

FALL 1983

COMMON NAME	BOTONICAL NAME	RATE/ACRE PLS	
		DRILLED	BROADCAST
Western Wheatgrass	<u>Agropyron smithii</u>	3.0	4.5
Bluebunch Wheatgrass	<u>Agropyron spicatum</u>	1.0	1.5
Russian Wildrye	<u>Elymus junceus</u>	2.0	3.0
Indianricegrass	<u>Oryzopsis hymenoides</u>	2.0	3.0
Yellow Sweet Clover	<u>Melilotus officinalis</u>	0.5	0.75
Nomad Alfalfa	<u>Medicago sativa</u>	0.5	0.75
Cicer Milkvetch	<u>Astragalus cicer</u>	1.0	1.5
Winterfat	<u>Ceratoides lanata</u>	1.0	1.5
Sagebrush	<u>Adamsia tridentata</u>	0.5	0.75
Rabbitbrush	<u>Chrysothamnus nauseosus</u>	0.5	0.75
		12.0	18.0

RECLAMATION SCHEDULE 1983 - 1985

SITE	ACREAGE	RATE OF SEED APPLICATION POUNDS PLS/ACRE	SEEDING METHOD	SEASON	SEEDBED PREPARATION	SURROUNDING COVER TYPE & % COVER*	SLOPE & DIRECTION*	MULCH OR FERTILIZER
Eureka 21	5	12	Drill	Comp 1983	Scarified	Sagebrush 14.6%	---	Mulch(2.5 ac)
Little Emma 3	1	18	Broadcast	Comp 1983	Scarified	Sagebrush 8.4%	---	---
Pride of the West 3	1	18	Broadcast	Spg 1984	Scarified	Pinyon-Juniper 4.3%	W 40%±	---
Pride of the West 4	1	18	Broadcast	Spg 1984	Scarified	Pinyon-Juniper 4.3%	NS 10%±	Mulch
Wagonhound 11	1	18	Broadcast	Comp 1983	Scarified	Sagebrush 25.9%	SE 5%±	---
Rainbow Vein Closure	4.5	12	Drill	Fall 1984	Topsoil	Pinyon-Juniper 21.4%	NW 15%±	Mulch
Ore Storage Pond	3.5	12	Drill	Fall 1984	Scarified	Shadscale 12.5%	SE10%±	Mulch (1/3 acre)
Facility Area	10	12 18	Drill & Broadcast	Comp 1983	Scarified Scarified	Shadscale Shadscale	12.5% 12.5%---	Fert. 5
Drill Pads & Roads**	20	12	Drill	Spg 1983	Scarified	Varies	Varies	---
TOTAL ACRES	47							

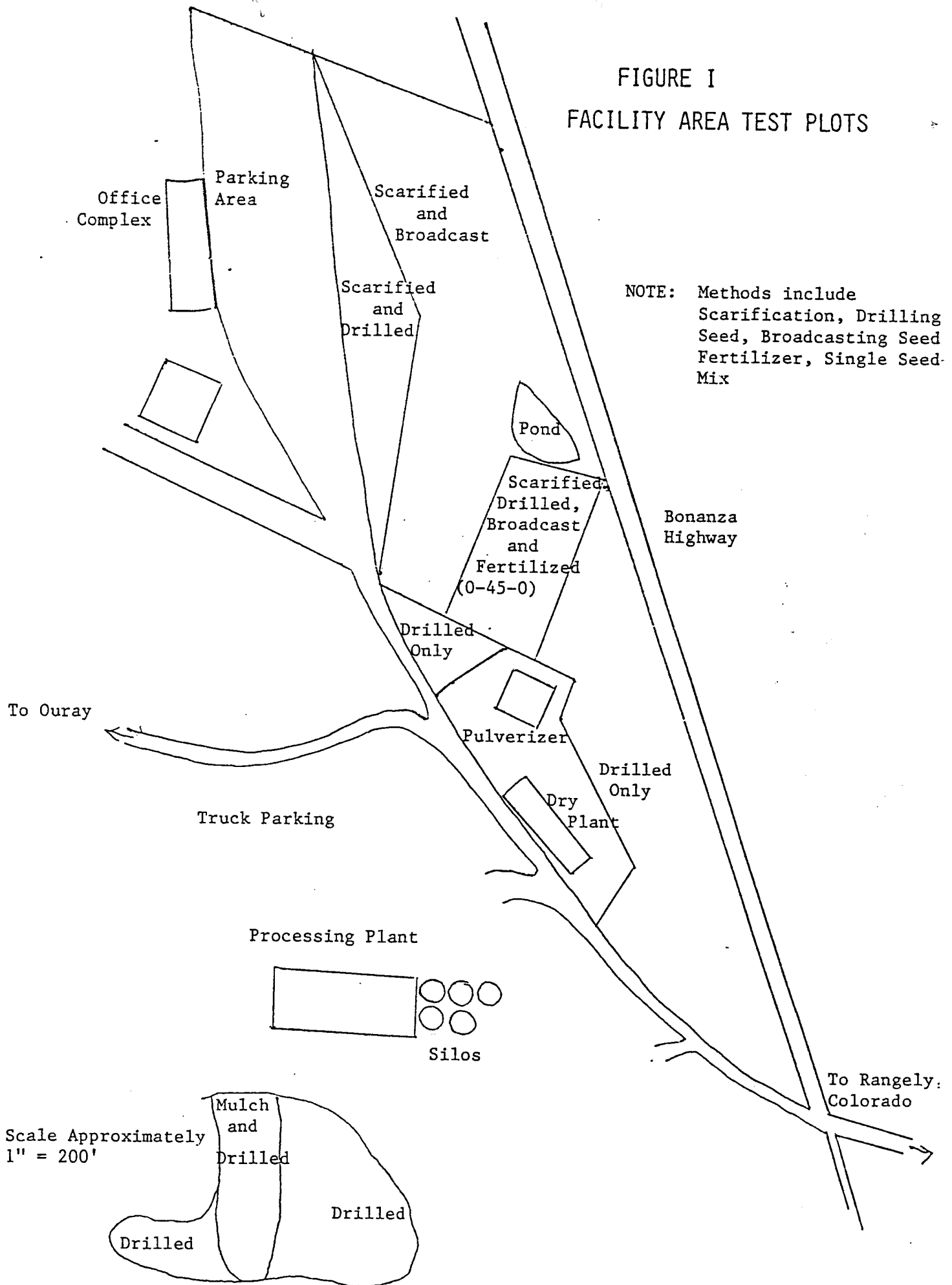
* See site analysis sheets for individual transect information - Appendix 5.

** Drill roads from exploration drilling

To Vernal, Utah

FIGURE I
FACILITY AREA TEST PLOTS

NOTE: Methods include
Scarification, Drilling
Seed, Broadcasting Seed
Fertilizer, Single Seed-
Mix



BONDING

Bonding calculations have been based on the following assumptions.

1. Demolition of all facilities, scarification of soil and revegetation
2. No salvage of any structures
3. Demolished structures would be disposed of in the existing permitted land fill
4. Private individuals and contractors hired by the state would be utilized
5. Seed mix with this MRP to be used.

Equipment rates were based upon quotes from Rental Rate Blue Book For Construction Equipment and from estimates obtained from local vendors and contractors.

Seed Mix	\$120/acre		
Work Day	8 hours		
Working Month	22 days		
Road Width (Avg)	25 feet		
Road Acreage	3 ac/mile		
Equipment Operators	\$15/hour		
Labor	\$10/hour		
Motor Grader Cat 14G	\$95.25/hour	\$635/day	\$12,500/mo.
Dozer (D-7)	\$115/hour	\$905/day	\$15,000/mo.
Crane (40 Tn)	\$97.75/hour	\$650/day	\$10,000/mo.
Loader (2 yd)	\$97.75/hour	\$650/day	\$10,000/mo.
Tractor-Trailer	\$50/hour	\$400/day	\$ 5,000/mo.
Farm Tractor JD 4440			
W/Seeder	\$35/hour	\$280/day	\$ 3,500/mo.

Summary Of Reclamation

Active Mine Sites	\$ 75,905
Abandoned Mine Sites	12,265
Operational Facilities	265,740
Roads	8,081
Storage pads, ponds & Reservoirs	12,384
Residential Area	16,331
Sub Total	\$390,716
15% Contingency	58,607
TOTAL TO BE BONDED	\$449,323

<u>Acres</u>	<u>\$/acre</u>
26.5	
43.8	
23.2	
2.3	
95.8	

Operational Facilities

Crew of 10 laborers for 3 months

10 Laborers @ \$.80/day for 66 days	\$ 52,800
2 Dozers @ \$15,000/mo for 1 month	30,000
2 Operators @ \$120/day ea for 66 days	15,840
2 Cranes @ \$10,000/mo for 1 month	20,000
2 Operators @ \$120/day each for 66 days	15,840
4 Tractor-Trailers @ \$5,000/mo for 2 months	40,000
4 Operators @ \$120/day each for 66 days	31,680
2 Loaders @ \$10,000/mo. for 2 months	40,000
2 Operators @ \$120/day each for 66 days	15,840
1 Farm Fractor @ \$280/day for 2 days	560
Reclamation: Seed for 26.5 acres	3,180
TOTAL	\$265,740

Roads

Total Milage 14.6 miles
Acreage 43.8 acres

3 Days Motor grader @ \$635/day	\$ 1,905
3 Days Operator @ \$120/day	360
2 Days Farm Tractor @ \$280/day	560
Seed for 43.8 acres @ \$120/acre	5,256
TOTAL	\$ 8,081

Storage Ponds, Pads and Reservoirs

Acreage 23.2 acres

10 Days Dozer @ \$905/day	\$ 9,050
2 Days Farm Tractor @ \$280/day	560
23.2 Acres Seed Mix @ \$120/acre	2,784
TOTAL	\$ 12,394

Residential Area

5 Days Dozer @ \$905/day	\$ 4,525
5 Days Loader @ \$650/day	3,250
10 Days Tractor-Trailer @ \$400/day	4,000
20 Days Operator @ \$120/day	2,400
20 Days Labor @ \$80/day	1,600
1 Day Farm Tractor @ \$280/day	280
2.3 Acres Seed Mix @ \$120/acre	276
TOTAL	\$ 16,331

I hereby commit the applicant to comply with Rule M-10, "Reclamation Standards" in its entirety, as adopted by the Board of Oil, Gas and Mining on March 22, 1978.

The applicant will achieve the reclamation standards for the following categories as outlined in Rule M-10 on all areas of land affected by this mine, unless a variance is granted in writing by the Division.

<u>Rule</u>	<u>Category of Commitment</u>	<u>Variance Requested?</u>
M-10(1)	Land Use	
M-10(2)	Public Safety and Welfare	
M-10(3)	Impoundments	
M-10(4)	Slopes	
M-10(5)	Highwalls	
M-10(6)	Toxic Materials	
M-10(7)	Roads and Pads	
M-10(8)	Drainages	
M-10(9)	Structures and Equipment	
M-10(10)	Shafts and Portals	
M-10(11)	Sediment Control	
M-10(12)	Revegetation	
M-10(13)	Dams	
M-10(14)	Soils	

I believe a variance is justified on a site-specific basis for the previous subsections of Rule M-10 as indicated. A narrative statement explaining these concerns is attached.

STATE OF Utah
COUNTY OF Uintah

I, R. L. HAFFNER, having been duly sworn depose and attest that all of the representations contained in the foregoing application are true to the best of my knowledge; that I am authorized to complete and file this application on behalf of the Applicant and this application has been executed as required by law.

Signed: R. L. Haffner

Taken, subscribed and sworn to before me the undersigned authority in my said county, this 10th day of December, 1983.

Notary Public: Charlotte Mitchell

My Commission Expires: February 1, 1986

PLEASE NOTE:

Section 40-8-13(2) of the Mined Land Reclamation Act provides for maintenance of confidentiality concerning certain portions of this report. Please check to see that any information desired to be held confidential is so labeled and included on separate sheets or maps.

Only information relating to the location, size or nature of the deposit may be protected as confidential.

Confidential Information Enclosed: (X) Yes () No

* See Confidential file
(geologic extent
of gilsonite
ore bodies)